

## II

### THE SECOND THREAT

#### Loss of Crucial National Capabilities— The Competitiveness Dimension

*Are the industrial successes of Japan and EC-92 changing the structure of the American economy in ways that may come to haunt the United States in the future, or will the market provide outcomes free from peril? More popularly, what steps are necessary to ensure Americans do not end up sweeping up around Asian or European machinery?*

In the previous section I argued that fundamental decline (Threat I) cannot be avoided unless the United States makes the adjustments in the consumption/savings/investment ratio needed to restore the country to a rough equilibrium in its external accounts. But even if this threat were removed, and the U.S. economy returned to equilibrium, we might find rival states engaged in more productive, skill-intensive, technology-based activities. In stylized terms, the contrast will be between a high-productivity, high-value-added, high-wage, high-innovation equilibrium and a lower-productivity, lower-skill, lower-wage, less innovative, and less technology-intensive equilibrium.

Threat II emerges from this second kind of equilibrium, from a suboptimal or inferior set of activities in the worker-and-firm economic base that reduces a nation's capabilities in comparison to other states. The state with the inferior capabilities will have a lower standard of living than others; it will suffer adverse terms of trade (it will have to

exchange more of its own products for the ones it gets in return); and it will have fewer resources to deploy to meet external challenges, influence other states, or participate in common efforts in the international arena.

Even more worrisome, there could be extensive negative political externalities as countries looked elsewhere to deepen political relationships with those nations who were increasingly the providers of advanced products, the source of cutting-edge innovations, the locale of scientific breakthroughs. Finally, as the analysis of this issue reveals (below), the so-called equilibrium could itself be illusory, as dynamic effects from learning-by-doing and first-mover advantages were lost. Other nations could forge ahead in the most advanced high-tech sectors, with American firms struggling at a disadvantage to catch up. In this context, the United States would be increasingly vulnerable to being manipulated or denied access to the most advanced goods, services, and technologies (see the discussion of Threat III below), because of fewer offsetting dependencies on their part.

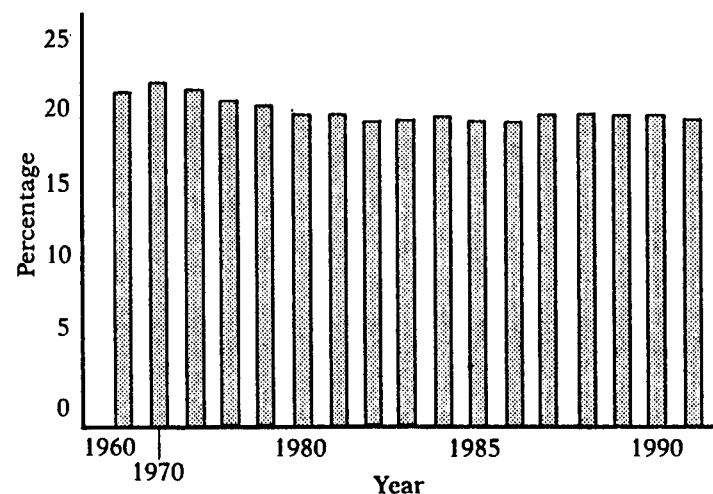
Consequently, an agenda for economic security must include the design of policies to influence what kinds of economic activities and productive capabilities are located within the country.

### Strengthening U.S. Competitiveness

There are few more controversial issues than the question of shaping the composition of economic activity in the United States. Even use of the word "composition" invites trouble, threatening to plunge

discussion toward doctrinal disputes about industrial policy.

What is remarkable is how much national strategists will be able to accomplish in addressing Threat II—in a way that satisfies economists' aversion to targeting and industrial policy advocates' special concern for the American industrial base—before having to confront the thorny questions of selective intervention or trade protection. Offering great comfort to the national strategist is the fact that, in contrast to the rather dismal contemporary context for addressing Threat I, the past decades have provided a powerful legacy of high-value-added, high-skill, high-innovation activities to build on in the present day. Although the United States (like Europe and Japan) is becoming more of a service economy, decreasing the *relative size* of the manufacturing sector ("the industrial base"), the *absolute size* of the manufacturing sector has been growing steadily larger and more technology-intensive. (Only the absolute size of the manufacturing labor force has shrunk slightly, consistent with increased automation.) At the same time, productivity in the U.S. manufacturing sector has risen noticeably, from an average gain of 2.6 percent per year in the 1960s through 2.3 percent in the 1970s, to 3.7 percent per year in the 1980s, giving American plants and workers the greatest output per unit of input in the world. Contrary to popular views, U.S. industrial workers are still the most productive in the world. The corresponding output of the Japanese worker in manufacturing is 83 percent of that of the U.S. worker, of the German worker 78 percent, and of the British worker 45 percent.<sup>12</sup> The American in-

TABLE 1. U.S. MANUFACTURING OUTPUT  
AS A PERCENTAGE OF GDP

Source: Bureau of Labor Statistics (revised April 1992). Prior to 1977, percentage of GNP is used. GNP measures output of a country's firms wherever they are located; GDP measures the output of firms within a country's borders.

dustrial base has grown both bigger and leaner in the past three decades.

But has it grown meaner? To answer this question requires examining the competitiveness (comparative performance) of American firms and workers with rivals elsewhere. Here the trends are not favorable. Productivity growth in manufacturing in other nations has been rising even faster than ours (although the foreign rate of growth is slowing). Thus, compared to our competitors in Europe and Asia, we have good reasons to be concerned.

What steps can the United States take to bolster the productivity, dynamism, and innovativeness of

TABLE 2. PRODUCTIVITY GROWTH IN MANUFACTURING

	United States	Japan	Germany
1960-70	2.6	10.3	5.7
1970-80	2.3	6.1	4.2
1980-88	3.7	4.5	5.7

Source: Department of Labor, *Handbook of Labor Statistics*

its industrial base? At first glance, the challenge of improving American competitive performance is surprisingly difficult. The task of isolating the determinants of productivity has led even the most careful analysts to throw up their hands. To a large extent, however, this is because of our blurred comprehension of what is going on in the service sector. When one looks at industrial activities directly, the diagnosis is more straightforward and easier to relate to the previous problems of macroeconomic policy.

The key elements to improving U.S. industrial performance are strengthening domestic investment in plant and equipment, strengthening domestic investment in human capital (worker education and training), and strengthening domestic investment in new technology.<sup>13</sup> The cost of capital is central to all three. For reasons largely related to the macroeconomic considerations discussed in the previous section, American firms have been operating at a substantial competitive disadvantage. The low U.S. savings rate (plus some tax considerations, to be discussed below) has translated into a higher cost of capital in the United States, a penalty of four to seven percentage points when compared to Japan

TABLE 3. ALTERNATE ESTIMATES OF THE COST OF CAPITAL

	<i>United States</i>	<i>Japan</i>
Hatsopoulos-Brooks	9.7	3.8
McCauley-Zimmer	11.2	7.2
Bernheim-Shoven	11.1	4.1

Source: J. Poterba, "Comparing the Cost of Capital in the United States and Japan: A Survey of Methods," Federal Reserve Bank of New York, *Quarterly Review*, Winter 1991.

(with about half of this when compared to Germany) over the past two decades.

As a consequence, when U.S. or Japanese firms have contemplated the construction of a new plant or research facility, the American companies were stuck with having to spend three to eight times as much as their Japanese rivals over the 30-year amortization life of a proposed investment. When U.S. and Japanese firms have contemplated the payback period for comparable projects, the American companies have had to get their money back in eight years, compared to eighteen years for the Japanese companies (at 9 percent versus 4 percent interest rates). To be sure, prudent corporations everywhere will have a portfolio of projects with differing payback periods (some quite short term, some quite long term). But the differential in the cost of capital has afforded the Japanese or German firms considerable leeway that American firms do not enjoy.

One way to put U.S. firms on a more equal footing with their rivals abroad would be to eliminate the idiosyncratic American practice of taxing returns from corporate earnings twice. This means that corporate dividends should be tax free either to

the provider (the firm) or to the recipient (the stockholder). It also implies that accumulated corporate earnings as embodied in share appreciation should be tax free. But a larger remedial impact lies in increasing the pool of capital in the United States by altering the balance between savings and consumption.

Over time one might expect that the liberalization of capital markets will equalize the cost of capital across borders. On the other hand, restrictions in product markets and in the ability to acquire corporations (including hostile acquisitions) may keep capital markets effectively segmented.<sup>14</sup>

In the meantime, the competitive performance of American firms cannot help being affected by relatively weaker investment rates. Over the past decade, both Germany and Japan have been dedicating a larger percentage of GNP to investment in plants and equipment than the United States, and since 1989 Japan has begun to invest more in *absolute amounts* as well (even though the Japanese economy is approximately half as large as the U.S. economy).

The high cost of capital, moreover, explains much about the infamous short time horizons of American companies and suggests that the comparatively myopic perspective of the latter will not change until there is progress on the macroeconomic front.<sup>15</sup>

Turning from the competitiveness of American firms to the competitiveness of American workers, one should recall that U.S. worker performance is the highest in the world and, measured by family efforts, there is scant evidence of comparative laziness in the American workforce. Whereas the in-

dividual Japanese worker, for example, greatly surpasses his (gender deliberate) U.S. or European counterpart in hours on the job and paucity of vacation days (2,100 hours per year versus 1,800 for Americans and 1,600 for Germans; 8 vacation days per year versus 20 for Americans and 30 for Germans), the American family is by most measures among the hardest working in the world (with multiple family members employed).<sup>16</sup>

Does the expansion of investment in human capital therefore promise the same potential improvement in performance that the expansion in physical plant and equipment might? At first glance, the challenge of improving worker performance might appear much more difficult because of the immensity of the problems that afflict America's K-12 educational system, and because of the received wisdom from twenty years of American education literature that more money does not help. Recent research suggests, however, that for the purposes of national strategists, neither is an accurate characterization of the challenge.

With regard to the question of whether additional investment in human resources will produce results, the received wisdom has traditionally suffered from a variety of statistical weaknesses, in particular the nonrandomness of test-taking. Straightforward comparisons of test results where there are large expenditures per pupil (Connecticut) with other regions where there are much smaller expenditures per pupil (South Dakota) have led to the conclusion that greater educational inputs do not do much to improve educational output. But since the population of those who produce test scores is a distinctive group whose size varies dra-

matically across locales, one ends up comparing the results from the top 2 percent in one state (South Dakota) with the results of the top 69 percent in another (Connecticut), imparting a sharp downward bias to the impact of public expenditures. When careful statistical adjustments are made for varying participation rates (and for demographic differences and for variation in school quality within states), there is much stronger justification for concluding that incremental resources devoted to smaller class size, higher teacher salaries, better facilities, do produce commensurate improvement in results.<sup>17</sup>

With regard to the immensity of overhauling America's educational structure, the subcomponent of the task of most immediate concern to national strategists here has shown itself to be far more manageable than reforming the system as a whole. In searching for institutions where worker skills are being most effectively transmitted, the rapidly growing universe of vocational courses in community colleges and private institutes offers impressive possibilities for enhancing worker productivity.<sup>18</sup> To the extent these "skill clinics" operate under pressures of the market on both the supply and the demand sides, they must design and update their curricula scrupulously to meet the most pressing employer needs. They cater to self-selected populations who do not lack career motivation or classroom discipline. Thus, while national strategists will not want to ignore the long-term need to upgrade America's K-12 educational system, they can take some comfort in the fact that public resources added at the margin in vocational training (including the last two years of high school followed by

two years of postsecondary training) can produce palpable results. More broadly, the prospects for further innovation via national certification in ascending tiers of skill training throughout life (portable skill portfolios) appear quite promising from a comparative perspective. German (and other European) apprenticeship and craft programs suggest large potential gains when adapted to an American environment.<sup>19</sup>

*Investing in Workers Versus Investing in Machines*

The most effective (and highly leveraged) policy tool to sponsor improvement in worker productivity would be a corporate tax credit for education and training expenditures (partial reimbursement). This would ensure business involvement in the planning, execution, and updating of the curriculum; it would also provide an important synergism with capital investment and with corporate research and development (R&D). If only the latter receive public support, firms may find it rational to design production processes around worker deficiencies ("dumbing down" technology as fast food restaurants do by creating cash registers with pictures in place of numbers on the keys) rather than designing production processes to incorporate more highly skilled workers. Unless there are simultaneous incentives for investment in physical, technological, and human capital, national strategists should be wary of advice simply to let markets work.<sup>20</sup> American interests will not be served by settling into a highly automated low-skill equilibrium.

Finally, we should not overlook the need for adjustment assistance for workers. Trade adjustment assistance has both an economic and a politi-

cal rationale.<sup>21</sup> Economically, it represents society's interest in assuring that domestic resources are redeployed as smoothly and rapidly as possible (while it is also motivated by humanitarian concerns for those dislocated by trade). Politically, it bribes those hit by the burden of adjustment not to use their political clout to halt the adjustment process. This latter rationale is not unimportant: while the benefits of trade liberalization typically outweigh the costs two to three times over, the costs are concentrated while the benefits are dispersed, meaning that textile workers or farmers or glassmakers may well be able to mount successful campaigns to block negotiations whose outcome the rest of society will greatly benefit from but not spend individual time fighting for (the Uruguay Round, the North American Free Trade Agreement), a classic case of the free-rider problem.

The problem with American programs of trade adjustment assistance in the past is that they did not motivate adjustment; instead they substituted for welfare ("burial expenses" in AFL-CIO parlance) with debilitating and humiliating consequences. Proposals for reform should help make trade adjustment assistance more effective in motivating workers to actually change jobs and locales rather than following the traditional pattern of simply sitting and waiting futilely for the old jobs to come back (providing 50 percent of the difference between a worker's old and new salary for two years, for example, effective only upon acceptance of a new job).<sup>22</sup>

To move from an assessment of the competitive position of U.S. firms and workers in the past to projections for the future, the relatively strong per-

formance of the national industrial base has to be evaluated in light of the fact that it has been operating under an internally imposed burden. There is no way to judge precisely how well the United States economy would perform in comparison to the economies of other countries, if the burden were lifted. One can draw some inferences about the composition of activities, however, from the fact that American companies, supplying global industrial markets from diverse national sources, have been maintaining their relative market shares surprisingly well over the past two decades.<sup>23</sup> Moreover, as they have done this, they have not been hollowing out and abandoning their home country manufacturing operations as they moved offshore (a charge that Paul Kennedy and others level against English firms in explaining the industrial decline of Edwardian Britain). Instead, they have been upgrading local activities as a complement to overseas production; assets per employee in manufacturing operations of U.S. parent corporations have remained approximately 20 percent higher than in developed country affiliates and almost 200 percent higher than in developing country affiliates.<sup>24</sup> In the course of this outward expansion by American manufacturing multinationals, the share of the manufacturing base devoted to capital goods has risen in the aggregate from 28 percent to 38 percent, almost half of which is exported (double the proportion of the late 1960s).<sup>25</sup>

To the extent the new national strategists are able, therefore, to improve the production climate in America, one would expect American firms to expand and strengthen their industrial facilities within the United States (rather than, for example, simply speeding a new international division of la-

bor in which service and administrative activities were centered in the United States). At the same time, of course, the United States would become an even more appealing locale for foreign investors (for the issue of whether their operations differ significantly from the operations of comparable U.S. firms, see below). As for the charge that nobody wants to buy American products, the reality is that the United States was the world's second largest exporter in 1990 (11.6 percent of the global total), behind Germany (12.1 percent), but well ahead of Japan (8.5 percent); preliminary indications suggest that America became number one in 1991.<sup>26</sup>

There is a dark side to this relatively upbeat economic assessment, however. A nation that does not invest in itself will not have as broad or as robust capabilities as one that does. At best, it will settle into a suboptimal equilibrium in comparison to the composition of economic and technological activities toward which a more frugal behavior pattern would lead it. In this context, the credo of maximizing consumer welfare needs to be infused with an ethic that transcends the immediate: the welfare of future generations is dependent upon a certain measure of restraint and discipline on the part of the present generation.

But is even this appraisal not too hopeful? Will the broad counsel to "simply practice responsible macroeconomics, and the market will take care of the rest"<sup>27</sup> prevent other countries from systematically capturing larger and larger shares of the high-productivity, high-skill, high-value-added, high-wage, high-innovation, technology-intensive activities at our expense? Can a doctrine of merely letting

markets work ensure adequately against the threat of other nations undermining "the exercise of American power," in the words of a study of high-tech industries by the Berkeley Roundtable, and consequently laying "the basis of a wholly new system that could markedly reduce U.S. influence"?<sup>28</sup>

To pursue these questions, we cannot avoid the dilemmas of industrial policy and trade protection. What should national strategists extract from this debate?

### The Debate over Industrial Policy

The early industrial policy debate that emerged in the mid-1980s took place in a peculiar context (expansionary fiscal policy, restrictionary monetary policy, high interest rates, and an overvalued dollar) that limited its applicability for future national strategy. Economists who wanted to let markets work were susceptible to charges of benign neglect (or worse) as one sector after another was decimated across the United States. Industrial policy advocates who urged immediate public intervention before the traditional sources of American economic strength were totally destroyed were susceptible to charges of wanting to replace the market entirely.

Now, as before, the starting point for economic analysis is that national interests are *not* served by selective intervention because markets are more effective in picking winners and losers than public officials and because interventionist measures penalize the rest of the economy (subsidies are a direct tax and trade protection an indirect tax on other activities). Selective intervention results in a less

productive, less competitive, less innovative composition of economic activities.

In contrast, the starting point for industrial policy analysis (putting aside strategic trade ideas for a moment) is that national interests *are* served by selective intervention because some sectors produce beneficial spillovers for the rest of the economy greater than those realized by the actors themselves, meaning that the market fails to supply optimal levels of resources to those sectors on its own.

In this contrast of perspectives, the question of market failure looms large. Unless barriers to the proper functioning of markets can be demonstrated, the most logical intuitive justifications for industrial policy that appeared initially self-evident do not hold up well to careful scrutiny: if the United States wants even more high-skilled, high-value-added industries, for example, so the early industrial policy argument went, why not simply target such industries directly for public support?

But an industrial policy of reallocating investment toward high-value-added activities where the capital/labor ratio ranges from three to six times greater than elsewhere, without expanding aggregate investment, would simply generate unemployment and actually retard economic growth: the given amount of capital as distributed among the government-induced composition of economic activities would employ fewer workers.<sup>29</sup> National strategists would therefore want to eschew intervention unless they were certain that the market was failing to provide inputs to the targeted activities. In general, however, the crucial demonstration of market failure has not been forthcoming.



Are there exceptions? What should national policy be where markets do fail to supply optimal amounts of resources to particular activities?

The clearest cases of market failure to emerge from the industrial policy debate lie along the cutting edge of creating new technologies and (equally important) the rapid incorporation of new technologies into commercial applications. Here, the beneficial spillovers to the nation from R&D activities run two to four times as large as the private return appropriated by the firms that undertake the R&D.<sup>30</sup> This "appropriability gap" justifies a role for public intervention to allocate larger resource flows for research and development than the market alone provides.

#### *A Civilian Equivalent to DARPA?*

Do these findings vindicate an industrial policy approach for R&D?

Contrary to the position of those who urge the creation of a governmental technology-targeting agency (a civilian equivalent to DARPA, the Defense Advanced Research Projects Agency), there is a straightforward way to fill this appropriability gap without encountering the pitfalls of having government bureaucrats try to pick winners and losers better than the market, namely, enlarging the R&D tax credit and making it permanent.<sup>31</sup> The tax credit would put an added impetus behind the industries for whom the payoff for extra R&D at the margin is greatest (according to one estimate, 432 firms in roughly eleven industries account for 80 percent of all privately funded R&D in the United States)<sup>32</sup> and

speed the commercialization of the basic discoveries and innovations in which the U.S. scientific community excels. Moreover, putting incremental resources in the hands of the companies directly would help fund those externalities that come from investing in local communities, local infrastructure, local educational facilities, without having the play of politics dictating whether Palo Alto, Route 128, the Research Triangle, Rochester, or Chippewa Falls was the more deserving.

In the absence of a demonstration that public authorities (backed by scientific expertise) could focus and manage the selection process better than the companies who could benefit from the outcome, it is safe to say that, dollar for dollar, the R&D tax credit would produce superior results. Two separate studies have shown that federally funded research undertaken by U.S. firms has been demonstrably less productive than projects funded by the companies themselves.<sup>33</sup> As a consequence, even in the case of cutting-edge R&D, it is difficult to see how national strategists could emerge from looking at the evidence convinced of a need for broad programs of public micro-intervention in the U.S. economy. (As we shall see later, however, there may be a grander rationale for creating a civilian targeting agency for new technology, albeit a much more counterintuitive and controversial one than is commonly offered.)

But national strategists cannot get away from the industrial policy debate so easily. First they must confront some genuinely difficult arguments about strategic trade theory.

### Strategic Trade Theory

Strategic trade theory, which focuses not simply on the industrial base in general ("manufacturing matters") but on specific types of industries where there are large economies of scale and great advantages from learning-by-doing, breathed new life into the industrial policy debate.<sup>34</sup> Such industries, including aerospace, advanced materials, computers and supercomputers, semiconductors, and biochemicals, have grown up around the world through a combination of historical circumstance, public support, and local investment in human and physical infrastructure in a manner only loosely related to inherent factor endowments in a region or country. By providing public support for such industries, the strategic trade literature argued, perhaps states could genuinely "create their own comparative advantage" in a way not envisioned in traditional trade models.<sup>35</sup>

Reinforcing the case for public sector intervention, from the perspective of national strategists, economies of scale mean that global markets will only sustain a given number of production sites, and the dynamic acquisition of skills in the course of production means that countries which miss one generation of products may have grave difficulties in fielding participants in the next generation. Under such conditions, it is not hard to make a convincing argument that national authorities will want to ensure the presence of national players in these key industries. Simply sitting by passively and allowing the market to work, in contrast, might be dangerous;

it could leave the nation too far behind to be able to catch up with more activist rivals abroad.

The objections to turning U.S. policy in the direction of strategic trade interventionism come, in the first instance, not from theoretical flaws in the justification but from practical considerations of implementation. (For the theoretical flaws themselves, including other nations' reactions, the prisoners' dilemma, and potential escalation, see below.)

The first practical difficulty springs from the fact that while there is an intuitive sense that such externalities are inherent in many advanced industries, there are no clear indicators of market failure (once again) for targeteers to use to guide public funding. Without clear indicators, how should government bureaucrats sort through potential candidates? Should industries with especially high profits get extra help from the government? Or industries with low profits? Industries with exceptionally well-paid workers? Or industries with low-paid workers? Confining the focus to high-tech sectors, why semiconductors but not optoelectronics? What about supercomputers, synthetic materials, or agrichemicals? And within sectors, how can government officials choose among technical alternatives?

Laying aside a historical record in which the ability of bureaucrats to pick winners and losers better than the market has never been very good, the two so-called test cases for strategic trade-type targeting, supercomputers and high definition television (HDTV), have tended to confirm that decentralized market-driven processes of economic selection are in fact superior to centralized design-

nation (even when the much vaunted Japanese targeting apparatus provides the designation).<sup>36</sup> The very existence of such test cases, moreover, has been the exception rather than the rule in overcoming the political clout of already-established losers; in the battle for public resources, sunset has proved more popular than sunrise on the horizon of the industrial democracies.<sup>37</sup>

Reinforcing the pessimism on the practical level, the record of government intervention on behalf of favored industries has confirmed that the handiest tools of public support are likely to be the most counterproductive. Rather than the (relatively speaking) less distortionary use of on-budget subsidies, public authorities have consistently preferred off-budget solutions via trade protection. Moreover, the form of trade protection itself—quantitative restrictions rather than tariffs—has (while offering some financial support to targeted industries such as machine tools, semiconductors, and steel) generated much larger trade rents that flow to their rivals abroad, allowing the latter to upgrade and prepare a stronger assault for the next round of competition. Meanwhile, the domestic users of semiconductors and machine tools, such as U.S. supercomputer and aerospace companies, suffer from high input costs that leave them at a disadvantage as well in comparison to their foreign competitors.<sup>38</sup>

The 1986 Semiconductor Agreement has been a sobering experience. The United States ended up creating a global cartel, under the supervision of Japan's Ministry of International Trade and Industry (MITI), to keep the prices of semiconductors high for the benefit of producers but with a devastating impact on any user who did not have a captive

source of supply (as most U.S. users, in contrast to the Japanese, did not). As David Mowery and Nathan Rosenberg conclude, if the results of the 1986 Semiconductor Agreement are considered a success, it is hard to imagine what would constitute a failure.<sup>39</sup>

Thus, after a decade of contention, the outcome of the industrial policy debate leaves national strategists in a quandary: they are faced with appealingly rigorous justification for activism in crucial industries, namely, high-tech industries with large economies of scale and dynamic learning-curve advantages; but the prospects of creating an effective national policy are poor.

Is there not some less ambitious interventionism possible to ensure that American firms in strategic trade-type industries have an adequate place in global markets? Should not the United States be hypersensitive, at the least, to the potentially preemptive and predatory actions of others?<sup>40</sup> Otherwise, America's rivals may capture a lopsided number of a given set of desirable jobs and industrial activities and use them as a springboard to gain greater and greater shares in the future.

"America's rivals," of course, tends to mean Japan. Between 1970 and 1987, Japan's share of global exports of science-based industries doubled, from 8 percent to 16 percent of the world total, while the U.S. share fell from 29 percent to 20 percent (and the EC share likewise declined from 45 percent to 38 percent).<sup>41</sup> But, whereas most countries exchanged access to each other's domestic high-tech markets in the process, Japan remained singularly self-contained. In contrast to both Germany and the United States, there was no discernible movement toward

TABLE 4. DOMESTIC SHARE OF HOME MARKET  
IN HIGH-TECH GOODS

	<i>Germany</i>	<i>Japan</i>	<i>United States</i>
1970	77	94	95
1980	59	93	89
1985	43	94	84

Source: National Science Board, *Science and Engineering Indicators*, 1989.

opening. Japan's own behavior justifies classifying it as an outlier. In practice, argue Robert Kuttner and Clyde Prestowitz, America's adherence to an ideology of nonintervention makes our economic fate the captive of other nations' industrial strategies.<sup>42</sup> The proper fallback position, according to this argument, is to fashion trade policy into a kind of substitute for industrial policy.

### Trade Policy as Industrial Policy

The objectives of trade-policy-as-industrial-policy would be to ensure that American high-tech producers are not unfairly shut out of foreign markets and that foreign high-tech producers do not engage in unfair behavior that drives American companies out of the U.S. domestic market. In addition, to address the requirements of strategic trade-type industries (to be precise, industries in which economies of scale require markets larger than single countries and in which producers gain learning-curve advantages that enable them to leapfrog over each other from one generation of products to an-

other—not merely whatever industry politicians or interest groups choose to label “strategic”), a third objective takes on crucial importance: to ensure that the United States gets rapid results, not merely long-term promises.

We might ask ourselves what is new about this approach, since the multilateral GATT negotiations already pursue the first two objectives. But the GATT outcomes are slow and uncertain. In high-tech industries, argues Laura D’Andrea Tyson, “slow resolution of trade policy disputes can be potentially disastrous to American firms or industries.”<sup>43</sup> In strategic trade theory, the third objective, a results-oriented desire for speed and certainty comes to drive the entire trade-policy-as-industrial-policy approach.

To pursue the goal of ensuring American producers are not shut out of foreign markets, conventional trade negotiations attempt to establish rules requiring that price, quality, and technical performance be the only criteria for awarding contracts. Bound by such rules, national (and local) authorities would have to follow nationality-blind purchasing practices.<sup>44</sup>

In the results-oriented critique, the quest for a rules regime (however appealing to Anglo-Saxon ways of thought the latter may be) is far too idealistic to meet the needs of strategic trade-type industries. To ensure rapid results in trade that involves a relatively small number of large, sensitive transactions (e.g., aircraft, supercomputers, satellites, telecommunications equipment) in which government purchases or government-directed purchases constitute a large percentage of all sales,<sup>45</sup> the pursuit of nationality-blind procurement procedures pales in

comparison to the dependability and dispatch of bilateral negotiations that set numerical targets, pledges, or quotas, sector by sector; in short, in comparison to the alternative of some kind of managed trade.

To guard against foreign producers engaging in predatory behavior that drives American companies out of their own domestic markets (or out of any other markets), conventional trade negotiations aim to establish a discipline that enables all parties to compete fairly, with no firm receiving unfair government subsidies or selling for prices that are unfairly low (dumping). On the issue of subsidies, a level playing field necessitates agreement on a common formula and common ceiling for assistance from defense budgets, and requires that regional, state, and municipal support be submitted to multilateral constraints.<sup>46</sup> With regard to dumping, any attempt to level the playing field for strategic trade-type industries must adjust to the forward-pricing practices that are inherent in industries in which costs drop sharply with the lengthening of production runs and the accumulation of learning-curve experience (a 20 percent to 40 percent cost reduction with each doubling of output in chemicals, semiconductors, and aircraft, for example), rendering inappropriate a rule forbidding sales below the average of previous per-unit costs.<sup>47</sup> A new, and more suitable, standard of fair pricing, in turn, would have to rest on much closer antitrust coordination and enforcement across borders, in which the structure of a given industry and the predatory intent of the pricer were given thorough scrutiny.

As the history of GATT negotiations has illustrated, progress in achieving more harmonized stan-

dards on subsidies and on dumping is not impossible. But what is certain, argue those who want to use trade-policy-as-industrial-policy, is that here again the process of achieving concrete results will be anything but swift.

### **Bilateral Arm-Twisting and Managed Trade**

Thus, as national strategists attempt to assess the trade-policy-as-industrial-policy argument, the criticism of the pace of progress on the issues of greatest concern for strategic trade-type industries stands well founded. But specifying a preferable alternative that will serve the interests of American national strategists is more difficult. To ensure market penetration, the counterproductive outcome of the 1986 Semiconductor Agreement has spurred experiments with "voluntary" import expansion agreements (in a VIE agreement a minimum share of a given national market is allocated to foreigners) to take the place of restraints on exports.<sup>48</sup> But all such attempts to carve up national markets have important anticompetitive effects (VIEs, for example, require government cartelization to apportion the promised import quantities and are likely to rest on trade diversion in favor of the strong-arm country at the expense of all others). More worrisome, experimentation with carefully contrived versions of managed trade on strategic-industry grounds opens the door to cruder efforts to divide up markets. And, once the door is open, it will be hard to shut (politically or legally) against the pleas of other industries that lack the structural characteristics which might

in theory justify such an exceptional approach (if microelectronics qualify, why not consumer electronics, auto parts, autos themselves, even agricultural products?). Finally, whether sophisticated or crude, attempts to manage trade fall back on bilateral arm-twisting rather than multilateral agreements founded upon mutual concessions, a practice that is bound to leave a legacy of resentment on the part of those whose arms are twisted and those whose trade is diverted when the twister is successful.

In the case of dumping, the results-oriented approach has led to a proliferation of arbitrary penalties, defensible neither in strategic-trade terms nor according to GATT rules. The method of procedure, in both European and American practice, has been to appoint oneself judge, jury, and executioner in specifying what constitutes unfair practices (including many not considered unfair by GATT), deciding the innocence or guilt of the other parties, and resorting to the threat or actual imposition of nationally determined punishment to force compliance with one's own verdict.<sup>49</sup>

Similarly, in the case of subsidies, attempts to define acceptable behavior in strategic trade-type industries has also grown more unilateral and capricious, a trend that the proliferation of public programs to promote civilian R&D will doubtless exacerbate. (The EC has already shown that it can be even more flagrant in playing the aggressive unilateral game on subsidies and dumping than we can.)<sup>50</sup>

Taken altogether, therefore, the extent to which a shift to a trade-policy-as-industrial-policy results-oriented approach will actually serve American eco-

nomie interests, even the narrow subcategory of interests clustered around the special needs of American strategic trade-type industries, is problematic. Not at all problematic, however, is the likelihood that the results-oriented approach will generate political tension among the major players since "progress" is built on unilateral definitions of fairness, bilateral pressure, and threats of retaliation rather than on the tradition of mutual concessions and multilateral negotiations that has characterized trade policy since the end of World War II.

Reinforcing concern about political tensions, there is an escalatory impulse along this path that may prove hard to mute: the use of trade-policy-as-industrial-policy to ensure that other nations do not capture a lopsided share of the most vital industries and that one's own country is represented adequately carries an inherent beggar-thy-neighbor dynamic. Global economies of scale may mean that not every major country can field a viable player. In the course of determining which nations (or groups of nations) will have to do without, what are time-urgent pressures for some are time-urgent pressures for all. The logical response in a duel of strategic trade policies is to match or exceed the first actor's moves to guard against preemption. Under such (prisoners' dilemma) conditions, a stalemate and cease-fire in which all sides regrouped to search for common agreement on underlying rules might become greatly to be wished for. At this point, the actors might well ask why they did not press even more vigorously for a rules-oriented outcome *before* the outbreak of hostilities.

The task for American national strategists, therefore, is to weigh the risk of erosion of indigenous capabilities in strategic trade-type high-tech industries under our traditional rules-oriented multilateral approach toward trade negotiations (with renewed determination but admittedly slow-moving advances) against the risk of rising international antagonisms and quite possibly counterproductive economic results under a results-oriented approach.

